



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/866,662	05/30/2001	Hideaki Kuroda	SON-1199/CON	6271

7590 08/22/2003

Ronald P. Kananen
RADER, FISHMAN & GRAUER, PLLC
Suite 501
1233 20th Street, N.W.
Washington, DC 20036

EXAMINER

PRENTY, MARK V

ART UNIT

PAPER NUMBER

2822

DATE MAILED: 08/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/866,662

Applicant(s)

KURODA, HIDEAKI

Examiner

MARK V PRENTY

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

This Office Action is in response to the RCE filed July 25, 2003.

The specification is objected to because "the silicon oxide film 62" at page 38, line 18, should read "the silicon oxide film 312." See the specification at the paragraph bridging pages 36 and 37, for example. See also Figs. 31 and 32.

Claims 3-6 are rejected under 35 U.S.C. 102 as being anticipated by Prior Art Fig. 3.

With respect to independent claim 3, Prior Art Fig. 3 discloses a semiconductor device, comprising: a conductive layer pattern formed on a substrate (i.e, the unnumbered doped regions at the substrate surface); a first inter-layer insulating film 154 which covers said conductive layer pattern and is formed on said substrate; a first connection hole formed in an upper layer of said first inter-layer insulating film above said conductive layer pattern; a second connection hole which reaches said conductive layer pattern from the bottom portion of said first connection hole and then has a smaller diameter than that of said first connection hole and formed on said first inter-layer insulation film; a plug 136 having conductivity and filling internal portions of said first connection hole and said second connection hole; a second inter-layer insulating film formed on said first inter-layer insulating film, wherein said second inter-layer insulating film includes up to five layers (culminating in fifth layer 164); a third connection hole which reaches said plug and is formed through said second inter-layer insulating film; and a conductive portion which is connected to said plug and formed in said third connection hole.

Claim 3 is thus rejected under 35 U.S.C. 102 as being anticipated by Prior Art Fig. 3.

With respect to independent claim 4, Prior Art Fig. 3 discloses a semiconductor device, comprising: a conductive layer pattern formed on a substrate (i.e, the unnumbered doped regions at the substrate surface); a first inter-layer insulating film 154 which covers said conductive layer pattern and is formed on said substrate; a first connection hole formed in an upper layer of said first inter-layer insulating film above said conductive layer pattern; a second connection hole which reaches said conductive layer pattern from the bottom portion of said first connection hole and then has a smaller diameter than that of said first connection hole and formed on said first inter-layer insulation film; a plug 136 having conductivity and filling internal portions of said first connection hole and said second connection hole, wherein the upper surface of said plug is formed to almost the same height as the surface height of said first inter-layer insulating film; a second inter-layer insulating film formed on said first inter-layer insulating film, wherein said second inter-layer insulating film includes up to five layers (culminating in fifth layer 164); a third connection hole which reaches said plug and is formed through said second inter-layer insulating film; and a conductive contact portion which is connected to said plug and formed in said third connection hole.

Claim 4 is thus rejected under 35 U.S.C. 102 as being anticipated by Prior Art Fig. 3.

Art Unit: 2822

With respect to dependent claim 5 and 6, Prior Art Fig. 3's plug 136 and conductive portion are a storage node contact portion of a dynamic random access memory.

Claims 5 and 6 are thus rejected under 35 U.S.C. 102 as being anticipated by Prior Art Fig. 3.

The applicant's argument in the first full paragraph on page 6 of the preliminary amendment filed July 25, 2003 is largely moot in view of the new ground of rejection. In any event, as explained in the new rejection, Prior Art Fig. 3's semiconductor device comprises a second inter-layer insulating film formed on the first inter-layer insulating film 154, wherein the second inter-layer insulating film includes up to five layers (culminating with fifth layer 164).

Registered practitioners can telephone examiner Prenty at (703) 308-4939. Any voicemail message left for the examiner must include the name and registration number of the registered practitioner calling, and the Application/Control (Serial) Number. Technology Center 2800's general telephone number is (703) 308-0956.

Mark Prenty
Mark V. Prenty
Primary Examiner